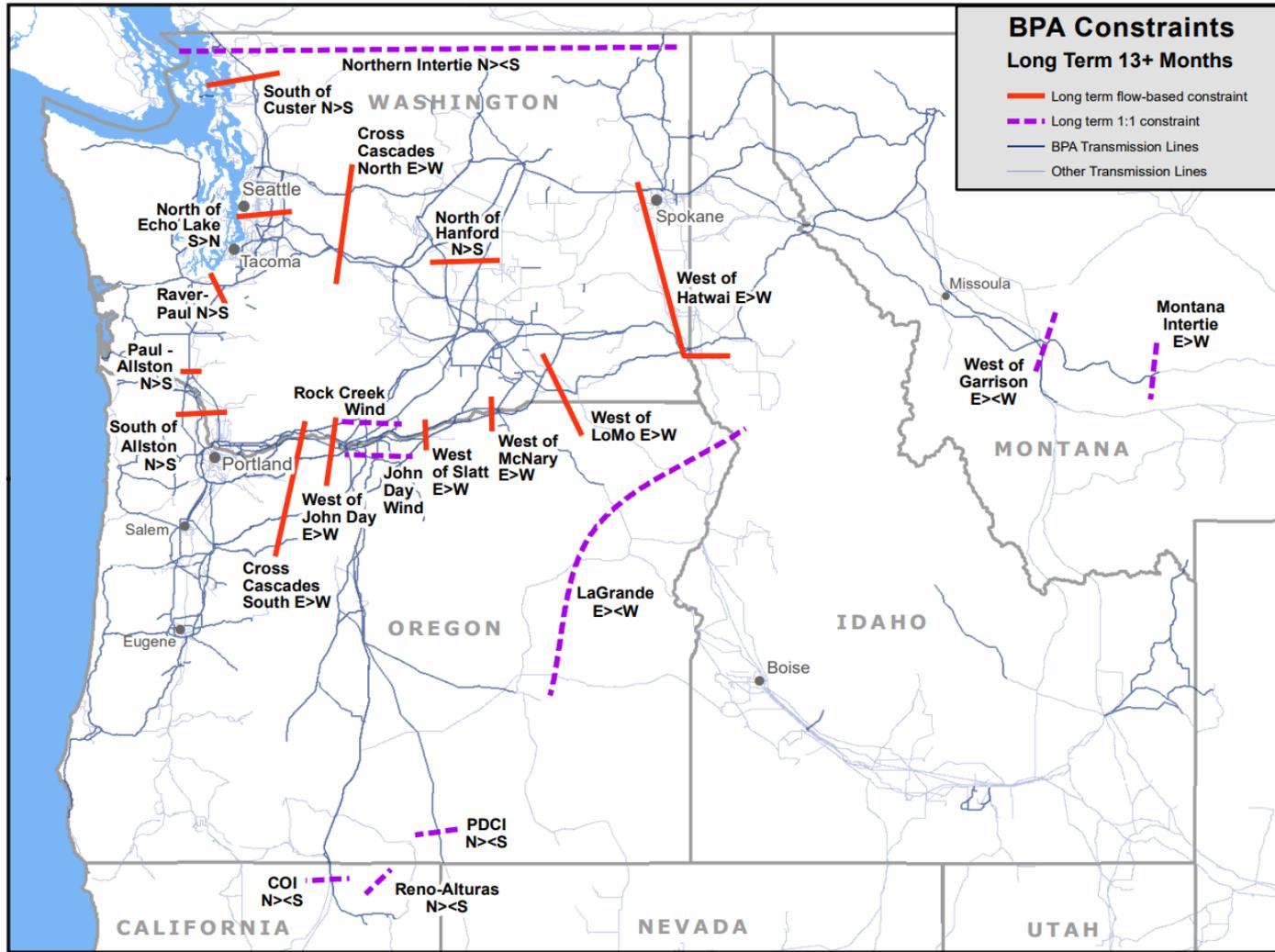


# 2021 Long-Term Available Transfer Capability (ATC) Update

December 7, 2021



# Map of LT ATC Constraints



\*Paul-Allston N>S is anticipated to be retired soon



# Scenarios in the 2021 ATC Update

<b>2021 ATC Update</b>			
<b>Season</b>	<b>Stress</b>	<b>Wind</b>	<b>CER</b>
January	Upper C	On	On
January	Lower C	On	On
January	Lower Snake	On	On
May	Lower C	Off	On
May	Lower Snake	Off	On
May	Lower C	On	On
May	Lower Snake	On	On
August	Upper C	Off	Off
August	Lower C	Off	Off
August	Lower Snake	Off	Off
August	Upper C	On	Off
August	Lower C	On	Off
August	Lower Snake	On	Off
<b>13 Scenarios</b>			

- Long-Term ATC Base Case
  - Covers the post 13 month time horizon
  - Completed annually to meet BPA’s obligation under the Long Term ATC Methodology to perform an annual update



# Assumptions in the 2021 ATC Update

- Basecases: 2026 & 2031 January, May, and August
  - Allows for forecasted geographical growth factors
  - Models upcoming coal plant retirements, while accounting for remaining long term firm transmission rights
  - Reflects long term unit outages at Upper Columbia resources
- Peak load cases: reduction in flows to California for scenarios with limited generation
- Off-peak load cases: Merit order dispatch displaces highest cost resources



# More Assumptions in the 2021 ATC Update

- New 220 MW solar generation near Ponderosa substation
- Schultz-Wautoma 500 kV series capacitor in-service 2026 & 2031
- No changes to Flowgate TTCs
- Retirement of North of John Day flowgate



# More Assumptions in the 2021 ATC Update

- 545 MW of new long-term firm and 380 MW of redirected transmission commitments made since the 2020 ATC Update
- 929 MW of new Bridge CF from 2021 TSEP
- Regional (Area 40) load growth between 2020 & 2021 updates:
  - ~500 MW peak growth in 5 year cases
  - ~100 MW peak growth in 10 year cases



# Results & Observations

## N>S Flowgates:

### BC Border: South of Custer

Resulting in decrease in ATC:

- Increased imports from BC

### I-5 Corridor: Raver - Paul, Paul - Allston, South of Allston

Resulting in increase in ATC:

- Increased east-side resources being sent across CCS
  - E>W flows to load centers are hitting south of I-5 paths
- Change in direction of growth between 5 and 10 year cases for all three paths (increasing ETCs vs decreasing ETCs)



# Results & Observations

## N>S Flowgates:

### Central WA: North of Hanford

Resulting in increase in ATC:

- Decreased forecast of generating capability at Upper Columbia resources
- Load growth resulting in decreased exports to California



# More Results & Observations

## Oregon/Washington E>W Flowgates:

### West of McNary

Resulting in variations in ATC:

- Change in direction of growth factor between 5 and 10 year cases (increasing ETCs vs decreasing ETCs)

### West of Slatt

Resulting in decrease in ATC:

- New renewable resources east of the path

### West of John Day

Resulting in decrease in ATC:

- New renewable resources east of the path
- Large load additions



# More Results & Observations

## Oregon/Washington E>W Flowgates:

### West of Lower Monumental

Resulting in decrease in ATC:

- Additional firm rights from wind resources east of the path

### West of Hatwai

Resulting in decrease in ATC:

- Decreased Upper Columbia hydro generation



# More Results & Observations

## Winter Flowgates:

### Cross Cascades North E>W

Resulting in variations in ATC:

- Growth rate is impacted by 5 vs. 10 year load forecasts
  - Seeing higher load difference in 5 year cases compared to 2020 update
  - ETCs decreased in 10 year case as compared to last year, while 5 year ETCs increased



# More Results & Observations

## Winter Flowgates:

### Cross Cascades South E>W

Resulting in decreased ATC:

- New firm rights from resources east of the path
- Portland area load growth

### North of Echo Lake S>N

Resulting in variations in ATC:

- Slope of ETC relationship between 5 and 10 year case impacts near term calculations
  - 5 year case has low delta from last year, while ETCs increased in 10 year case due to load growth



# New Long-Term ATC Values

ATC For Posting Following Release of 2021 ATC Update										
Path Name	TTC	2023	2024	2025	2026	2027	2028	2029	2030	2031
South of Allston N>S -- BPA	2,115	378	451	444	436	429	421	414	406	399
Cross Cascades North E>W	10,250	0	0	79	166	252	338	423	507	590
West of Lower Monumental E>W	4,200	370	368	239	239	241	244	246	248	250
Cross Cascades South E>W	7,500	799	765	746	726	706	687	667	647	627
North of Hanford N>S	4,450	884	903	927	949	978	1004	1027	1049	1068
Paul-Allston N>S	2,400	719	698	683	682	681	681	680	679	678
Raver-Paul N>S	1,450	117	77	74	71	68	65	62	59	56
West of McNary E>W	5,230	2293	2229	2209	2196	2182	2169	2155	2141	2127
West of Slatt E>W	4,670	1100	1047	1017	992	980	967	954	941	928
West of John Day E>W	4,530	610	531	441	419	396	374	351	328	305
South of Custer N>S	900	0	0	0	0	0	0	0	0	0
North of Echo Lake S>N	2,800	0	0	0	37	76	113	150	187	223
West of Hatwai E>W	3,650	296	304	73	85	98	110	123	135	147



# Long-Term ATC Deltas

Change in ATC For Posting Following Release of 2021 ATC Update										
Path Name	TTC	2023	2024	2025	2026	2027	2028	2029	2030	2031
South of Allston N>S -- BPA	2,115	265	357	310	300	291	282	273	263	255
Cross Cascades North E>W	10,250	(752)	(643)	(555)	(459)	(377)	(282)	(188)	(94)	(2)
West of Lower Monumental E>W	4,200	(113)	(40)	(49)	(51)	(57)	(56)	(57)	(57)	(57)
Cross Cascades South E>W	7,500	(894)	(759)	(643)	(589)	(547)	(497)	(447)	(396)	(345)
North of Hanford N>S	4,450	345	312	266	226	133	71	31	8	(5)
Paul-Allston N>S	2,400	79	82	34	19	4	(9)	(23)	(37)	(51)
Raver-Paul N>S	1,450	72	80	67	55	38	26	14	2	(10)
West of McNary E>W	5,230	83	172	164	138	105	77	50	22	(6)
West of Slatt E>W	4,670	(112)	(109)	(148)	(196)	(235)	(274)	(312)	(350)	(387)
West of John Day E>W	4,530	(40)	(86)	(128)	(213)	(311)	(402)	(491)	(578)	(662)
South of Custer N>S	900	(45)	(45)	(49)	(53)	(58)	(62)	(66)	(70)	(74)
North of Echo Lake S>N	2,800	(92)	(87)	(82)	(40)	4	46	88	130	171
West of Hatwai E>W	3,650	(179)	(186)	(198)	(201)	(203)	(205)	(207)	(210)	(212)



# Immediate Next Steps

- 2021 ATC Update results will be released and applied to all pending long term transmission service requests (TSRs), using the PTDF-based evaluation described in section 8 of the *ATC and AFC Methodologies for the Planning Time Period, V14* document
- Postings on the external site will be updated over the next month:  
<https://www.bpa.gov/transmission/Reports/TransmissionAvailability/Pages/default.aspx>
  - ATC, AFC and Conditional Firm Inventory
  - AFC/ATC Less Pending Queued Request Inventory
  - Long Term Pending Queue
- Long-Term Transmission Inventory and Redirect Maps are also available for assessing potential impacts of Transmission Service Requests.

